

What is claimed:

1. An earmuff having anatomically correct ear cups, comprising:

a head band having a right end portion, a medial portion and a left end portion, the head band curved to generally conform to a crown of a person's head;

a first end mount connected to the right end portion of the head band such that the first end mount is adjustable relative to the head band, a distal end portion of the first end mount defining a yoke;

a second end mount connected to the left end portion of the head band such that the second end mount is adjustable relative to the head band, a distal end of the second end mount defining a yoke;

a right ear cup;

a left ear cup;

a first connector assembly for connecting the right ear cup to the yoke of the first end mount such that the right ear cup is axially rotatable for providing proper covering alignment with the person's right ear when the earmuff is disposed on the person in an operative, protective position, while permitting

the right ear cup to be laterally moved to a position away from the person's body when the head band of the ear muff is disposed in a storage position about the person's neck; and a second connector assembly for connecting the left ear cup to the yoke of the second end mount such that the left ear cup is axially rotatable for providing proper covering alignment with the person's left ear when the earmuff is disposed on the person in an operative, protective position, while permitting lateral movement of the left ear cup away from the person's body when the head band of the earmuff is disposed in a storage position about the person's neck.

2. The earmuff having anatomically correct ear cups of Claim 1 further comprising:

a right volume expansion ring connectable to the right ear cup; and
a left volume expansion ring connectable to the left ear cup.

3. The earmuff having anatomically correct ear cups of Claim 2 further comprising:

a right cushion ring connectable to the right volume expansion ring; and

a left cushion ring connectable to the left volume expansion ring.

4. The earmuff having anatomically correct ear cups of Claim 2 further comprising:

a plurality of right cushion rings connectable to the right volume expansion ring for providing attenuation adjustment to the right ear cup; and

a plurality of left cushion rings connectable to the left volume expansion ring for providing attenuation adjustment to the left ear cup.

5. The earmuff having anatomically correct ear cups of claim 1 wherein the right ear cup and the left ear cup are each provided with a back side portion and a front side portion, the front side portion of each of the right ear cup and the left ear cup having a chamber formed therein, and wherein the yoke defined by the distal end portion of the first end mount comprising a pair of oppositely disposed, aligned lugs extending inwardly a distance into an opening of the yoke, the opening in the yoke sized and configured to receive at least a portion of the first connector assembly for connecting the right ear cup to the yoke of the first end mount, and the yoke defined by the distal end portion of the

second end mount comprising a pair of oppositely disposed, aligned lugs extending inwardly a distance into an opening of the yoke, the opening in the yoke sized and configured to receive at least a portion of the second connector assembly for connecting the left ear cup to the yoke of the second end mount and wherein the first connector assembly comprises:

- a right ear cup connector disposed on the back side portion of the right ear cup; and

- a first end mount connector pivotally connected to the yoke defined in the distal end portion of the first end mount such that, upon connecting the right ear cup connector to the first end mount connector, the right ear cup is axially and laterally rotatable relative to the first end mount;

and wherein the second connector assembly comprises:

- a left ear cup connector disposed on the back side portion of the left ear cup; and

- a second end mount connector pivotally connected to the yoke defined in the distal end portion of the second end mount such that, upon connecting the left ear cup connector to the second end mount connector, the left ear cup is axially and laterally rotatable relative to the second end mount.

6. The earmuff having anatomically correct ear cups of claim 5

wherein the right ear cup connector comprises:

a post disposed on the backside portion of the right ear cup and

extending outwardly therefrom; and

an enlarged head disposed on a distal end of the post;

and wherein the first end mount connector comprises:

a housing having a substantially T-shaped slot extending

therethrough for receiving the enlarged head of the right ear

cup connector, the housing further provided with aligned,

oppositely disposed cutaway portions on an upper portion

thereof such that the cutaway portions are disposed above

opposite ends of the substantially T-shaped slot;

and wherein the left ear cup connector comprises:

a post disposed on the backside portion of the left ear cup and

extending outwardly therefrom; and

an enlarged head disposed on a distal end of the post;

and wherein the second end mount connector comprises;

a housing having a substantially T-shaped slot extending

therethrough for receiving the enlarged head of the left ear

cup connector, the housing further provided with aligned,

oppositely disposed cutaway portions on an upper portion

thereof such that the cutaway portions are disposed above opposite ends of the substantially T-shaped slot.

7. The earmuff having anatomically correct ear cups of claim 6 wherein the first connector assembly further comprising;

- a plurality of spatially disposed rib members formed on the backside of the right ear cup so as to extend outwardly from the post; and

- a plurality of spatially disposed teeth formed in at least a portion of a lower surface of the housing, the spatially disposed rib members and the spatially disposed teeth cooperating to permit axial rotation of the right ear cup about the post of the first connector assembly while stabilizing the right ear cup in a desired position due to meshing of the rib members with the teeth;

and wherein the second connector assembly further comprises:

- a plurality of spatially disposed rib members formed on the backside of the left ear cup so as to extend outwardly from the post; and

- a plurality of spatially disposed teeth formed in at least a portion of a lower surface of the housing, the spatially disposed rib

members and the spatially disposed teeth cooperating to permit axial rotation of the left ear cup about the post of the second connector means while stabilizing the left ear cup in a desired position due to meshing of the rib members with the teeth.

8. The earmuff having anatomically correct ear cups of claim 1 wherein the right ear cup and the left ear cup are each provided with a back side portion and a front side portion, the front side portion of each of the right ear cup and the left ear cup having a chamber formed therein and the back side portions thereof having a substantially planar connecting area provided thereon, and wherein the yoke defined by the distal end portion of the first end mount comprising a pair of oppositely disposed, aligned lugs extending inwardly a distance into an opening of the yoke, the opening in the yoke sized and configured to receive at least a portion of the first connector assembly for connecting the right ear cup to the yoke of the first end mount, and the yoke defined by the distal end portion of the second end mount comprising a pair of oppositely disposed, aligned lugs extending inwardly a distance into an opening of the yoke, the opening in the yoke sized and configured to receive at least a portion of the second connector assembly for connecting the left ear cup to the

yoke of the second end mount and wherein the first connector assembly comprises:

- a right ear cup connector disposed on the substantially planar connecting area of the back side portion of the right ear cup;

- and

- a first end mount connector pivotally connected to the yoke defined in the distal end portion of the first end mount via the oppositely disposed lugs of the yoke of the first end mount;

and wherein the second connector assembly comprises:

- a left ear cup connector disposed on the substantially planar area on the back side portion of the left ear cup; and

- a second end mount connector pivotally connected to the yoke defined in the distal end portion of the second end mount via the oppositely disposed lugs of the yoke of the second end mount.

9. The earmuff having anatomically correct ear cups of claim 8 wherein the right ear cup connector comprises:

- a post substantially centrally disposed in the substantially planar connecting area on the backside portion of the right ear cup;

- and

an enlarged circular head disposed on a distal end of the post;
and wherein the first end mount connector comprises:

a housing having a substantially T-shaped slot extending therethrough for receiving the enlarged circular head of the right ear cup connector, the housing further provided with aligned, oppositely disposed cutaway portions on an upper portion thereof such that the cutaway portions are disposed above opposite ends of the substantially T-shaped slot;

and wherein the left ear cup connector comprises:

a post disposed on the backside portion of the left ear cup and extending outwardly therefrom; and

an enlarged circular head disposed on a distal end of the post;

and wherein the second end mount connector comprises;

a housing having a substantially T-shaped slot extending therethrough for receiving the enlarged circular head of the left ear cup connector, the housing further provided with aligned, oppositely disposed cutaway portions on an upper portion thereof such that the cutaway portions are disposed above opposite ends of the substantially T-shaped slot.

10. The earmuff having anatomically correct ear cups of claim 9 wherein

the first connector assembly further comprises:

- a plurality of spatially disposed rib members formed on the backside of the right ear cup so as to extend outwardly from the post and terminating substantially adjacent a perimeter of the substantially planar connecting area; and
- a plurality of spatially disposed teeth formed in at least a portion of a lower surface of the housing, and the spatially disposed rib members and the spatially disposed teeth cooperating to permit axial rotation of the right ear cup about the post of the first connector assembly while stabilizing the right ear cup in a desired position due to meshing of the rib members with the teeth;

and wherein the second connector assembly further comprises:

- a plurality of spatially disposed rib members formed on the backside of the right ear cup so as to extend outwardly from the post and terminating substantially adjacent a perimeter of the substantially planar connecting area; and
- a plurality of spatially disposed teeth formed in at least a portion of a lower surface of the housing, the spatially disposed rib members and the spatially disposed teeth cooperating to permit axial rotation of the right ear cup about the post of

the first connector assembly while stabilizing the right ear cup in a desired position due to meshing of the rib members with the teeth.

11. The earmuff having anatomically correct ear cups of claim 10 wherein the backside portion of each of the right ear cup and the left ear cup is provided an upper indented portion and a lower indented portion, the upper indented portion facilitating the wearing of a hard hat and the lower indented portion facilitating the firing of a shoulder gun for recreation and sport.

12. The earmuff having anatomically correct ear cups of claim 1 wherein the backside portion of each of the right ear cup and the left ear cup is provided an upper indented portion and a lower indented portion, the upper indented portion facilitating the wearing of a hard hat and the lower indented portion facilitating the firing of a shoulder gun for recreation and sport.

13. An earmuff having anatomically correct ear cups, comprising:
a head band having a right end portion, a medial portion and a left end portion, the head band curved to generally conform to

a crown of a person's head;

a first end mount connected to the right end portion of the head band such that the first end mount is adjustable relative to the head band;

a first yoke hingedly connected to a distal end of the first end mount, the first yoke having spatially disposed legs defining an opening therebetween;

a first housing formed on one of the legs of the first yoke, the first housing having a plurality of step portions openly communicating with the opening of the first yoke;

a second housing formed on the other leg of the first yoke so as to be substantially aligned with the first housing, the second housing having a plurality of step portions openly communicating with the opening of the first yoke and substantially aligned with the step portions of the first housing;

a second end mount connected to the left end portion of the head band such that the second end mount is adjustable relative to the head band;

a second yoke hingedly connected to a distal end of the second end mount, the second yoke having spatially disposed legs

defining an opening therebetween;

a first housing formed on one of the legs of the second yoke, the first housing having a plurality of step portions openly communicating with the opening of the second yoke;

a second housing formed on the other leg of the second yoke so as to be substantially aligned with the first housing, the second housing having a plurality of step portions openly communicating with the opening of the second yoke and substantially aligned with the step portions of the first housing;

a right ear cup;

a left ear cup;

first connecting means for connecting the right ear cup to the first and second housings of the first yoke of the first end mount such that the right ear cup is axially rotatable within the first yoke; and

second connecting means for connecting the left ear cup to the first and second housings of the second yoke of the second end mount such that the left ear cup is axially rotatable within the second yoke, and wherein the connection of the first yoke to the distal end of the first end mount, the connection of the

second yoke to the distal end of the second end mount, the connection of the right ear cup to the first yoke and the connection of the left ear cup to the second yoke permit the right ear piece and the left ear piece to be folded in a storage position substantially between the first and second end portions of the head band.

14. The earmuff having anatomically correct ear cups of claim 13 wherein the right ear piece is further characterized as having a first side and a second side and the left ear piece is further characterized as having a first side and a second side, and wherein the first connecting means for connecting the right ear cup to the first and second housings of the first yoke comprises:

a pair of pivot pins, one of the pivot pins connected to the first side of the right ear cup so as to extend outwardly therefrom, and the other of the pivot pins connected to the second side of the right ear cup so as to extend outwardly therefrom, whereby upon positioning a distal end portion of one of the pivot pins in the first housing of the first yoke of the first end mount and a distal end portion of the other pivot pin in the second housing of the first yoke of the first end mount, the

right ear cup is connected to the first yoke;
and wherein the second connecting means for connecting the left ear cup to the first and second housings of the second yoke comprises:

a pair of pivot pins, one of the pivot pins connected to the first side of the left ear cup so as to extend outwardly therefrom, and the other of the pivot pins connected to the second side of the left ear cup so as to extend outwardly therefrom whereby, upon positioning a distal end portion of one of the pivot pins in the first housing of the second yoke of the second end mount and a distal end portion of the other pivot pin in the second housing of the second yoke of the second end mount, the left ear cup is connected to the second yoke.

15. The earmuff having anatomically correct ear cups of claim 14 wherein the backside portion of each of the right ear cup and the left ear cup is provided an upper indented portion and a lower indented portion, the upper indented portion facilitating the wearing of a hard hat and the lower indented portion facilitating the firing of a shoulder gun for recreation and sport.

16. The earmuff having anatomically correct ear cups of claim 13

wherein the backside portion of each of the right ear cup and the left ear cup is provided an upper indented portion and a lower indented portion, the upper indented portion facilitating the wearing of a hard hat and the lower indented portion facilitating the firing of a shoulder gun for recreation and sport.

17. An earmuff having anatomically correct ear cups, comprising:

- a head band having a right end portion, a medial portion and a left end portion, the head band curved to generally conform to a crown of a person's head;

- a first end mount connected to the right end portion of the head band such that the first end mount is adjustable relative to the head band, a distal end portion of the first end mount defining a yoke;

- a second end mount connected to the left end portion of the head band such that the second end mount is adjustable relative to the head band, a distal end of the second end mount defining a yoke;

- an anatomically correct right ear cup defining a chamber having an opening shaped to substantially correspond to the shape of a person's right ear;

an anatomically correct left ear cup defining a chamber having an opening shaped to substantially correspond to the shape of a person's left ear;

first connecting means for connecting the anatomically correct right ear cup to the yoke of the first end mount such that the anatomically correct right ear cup is axially rotatable for providing proper covering alignment with the person's right ear when the earmuff is disposed on the person in an operative, protective position, while permitting the anatomically correct right ear cup to be laterally moved to a position away from the person's body when the head band of the ear muff is disposed in a storage position about the person's neck; and

second connecting means for connecting the anatomically correct left ear cup to the yoke of the second end mount such that the anatomically correct left ear cup is axially rotatable for providing proper covering alignment with the person's left ear when the earmuff is disposed on the person in an operative, protective position, while permitting lateral movement of the anatomically correct left ear cup away from the person's body when the head band of the earmuff

is disposed in a storage position about the person's neck.

18. The earmuff having anatomically correct ear cups of Claim 17 further comprising:

- a right volume expansion ring having an outer periphery and an inner periphery, a portion of the outer periphery of the right volume expansion ring substantially corresponding in size and shape to a periphery of the anatomically correct right ear cup, the inner periphery of the right volume expansion ring shaped to substantially correspond to the shape of the right ear of the person and sized to permit communication of the right ear with the chamber of the anatomically correct right ear cup when the right volume expansion ring is connected to the anatomically correct right ear cup; and
- a left volume expansion ring connectable to the anatomically correct left ear cup, the left volume expansion ring having an outer periphery and an inner periphery, a portion of the outer periphery of the left volume expansion ring substantially corresponding in size and shape to a periphery of the anatomically correct left ear cup, the inner periphery shaped to substantially correspond to the shape of the left

ear of the person and sized to permit communication of the left ear with the chamber of the anatomically correct left ear cup when the left volume expansion ring is connected to the anatomically correct left ear cup.

19. The earmuff having an anatomically correct ear cups of Claim 18 further comprising:

- a right cushion ring connectable to the right volume expansion ring, the right cushion ring having an outer periphery and an inner periphery, a portion of the outer periphery of the right cushion ring substantially corresponding in size and shape to a periphery of the right volume expansion ring, the inner periphery shaped to substantially correspond to the shape of the right ear of the person and sized to permit communication of the right ear with the chamber of the anatomically correct right ear cup when the right cushion ring is connected to the right volume expansion ring; and
- a left cushion ring connectable to the left volume expansion ring, the left cushion ring having an outer periphery and an inner periphery, a portion of the outer periphery of the left cushioning ring substantially correspond in size and shape to a periphery

of the left volume expansion ring, the inner periphery shaped to substantially correspond to the shape of the left ear of the person and sized to permit communication of the left ear with the chamber of the anatomically correct left ear cup when the left cushion ring is connected to the left volume expansion ring.

20. The earmuff having anatomically correct ear cups of Claim 18 further comprising:

a plurality of right cushion rings connectable to the right volume expansion ring for providing attenuation adjustment to the anatomically correct right ear cup, each of the plurality of right cushion rings having an outer periphery and an inner periphery, a portion of the outer periphery of the right cushion rings substantially corresponding in size and shape to a periphery of the right volume expansion ring, the inner periphery shaped to substantially correspond to the shape of the right ear of the person and sized to permit communication of the right ear with the chamber of the anatomically correct right ear cup when the plurality of right cushion rings is connected to the right volume expansion

ring; and

a plurality of left cushion rings connectable to the left volume expansion ring for providing attenuation adjustment to the anatomically correct left ear cup, each of the plurality of the left cushion rings having an outer periphery and an inner periphery, a portion of the outer periphery of each of the left cushion rings substantially corresponding in size and shape to a periphery of the left volume expansion ring, the inner periphery shaped to substantially correspond to the shape of the left ear of the person and sized to permit communication of the left ear with the chamber of the anatomically correct left ear cup when the plurality of left cushion rings is connected to the left volume expansion ring.

21. The earmuff having an anatomically correct ear cups of Claim 17 wherein the anatomically correct right ear cup and the anatomically correct left ear cup are each provided with a back side portion and a front side portion, the front side portion of each of the anatomically correct right ear cup and the anatomically correct left ear cup having the chamber formed therein and the back side portions thereof having a connecting area formed thereon, the yoke defined by the distal end

portion comprising a pair of oppositely disposed, aligned lugs extending inwardly a distance into an opening of the yoke, the opening in the yoke sized and configured to receive at least a portion of the right ear cup, and wherein the first connecting means connecting the right ear cup to the yoke of the first end mount comprises:

- a post substantially centrally disposed in the connecting area formed on the back side portion of the anatomically correct right ear cup and extending outwardly therefrom, the post having a circular shaped head on a distal end thereof;
- a substantially dome-shaped housing having a substantially T-shaped slot in a lower portion thereof, the substantially T-shaped slot adapted to slidably receive the post such that the circular shaped head on the distal end of the post is retained in the substantially T-shaped slot, the substantially dome-shaped housing further having aligned, oppositely disposed cutaway portions on an upper portion thereof, the cutaway portions being disposed above opposite ends of the substantially T-shaped slot such that, upon connecting the substantially dome-shaped housing to the yoke of the first end mount, the lugs of the yoke extend inwardly into the substantially T-shaped slot and secure the anatomically

correct right ear cup to the yoke of the first end mount and
thereby provide axial and lateral rotation of the anatomically
correct right ear cup;

and wherein the second connecting means for connecting the
anatomically correct left ear cup to the yoke of the second end mount
comprises:

- a post substantially centrally disposed in the connecting area
formed on the back side portion of the anatomically correct
left ear cup and extending outwardly therefrom, the post
having a circular shaped head on a distal end thereof;

- a substantially dome-shaped housing having a substantially T-
shaped slot in a lower portion thereof, the substantially T-
shaped slot adapted to slidably receive the post such that the
circular shaped head on the distal end of the post is retained
in the substantially T-shaped slot, the substantially dome-
shaped housing further having aligned, oppositely disposed
cutaway portions on an upper portion thereof, the cutaway
portions being disposed above opposite ends of the
substantially T-shaped slot such that, upon connecting the
substantially dome-shaped housing to the yoke of the second
end mount, the lugs of the yoke extend inwardly into the

substantially T-shaped slot and thereby secures the anatomically correct left ear cup to the yoke of the second end mount and thereby provide axial and lateral rotation of the anatomically correct left ear cup.

22. The earmuff having anatomically correct ear cups of Claim 21 wherein the first connector means for connecting the anatomically correct right ear cup to the yoke of the first end mount further comprises:

- a plurality of spatially disposed rib members extending outwardly from the post and terminating substantially adjacent an outer perimeter of the connecting area formed on the back side portion of the anatomically correct right ear cup; and

- a plurality of spatially disposed teeth formed in a lower surface of the substantially dome-shaped housing, the spatially disposed rib members and the spatially disposed teeth cooperating to permit axial rotation of the anatomically correct right ear cup about the post of the first connector means while stabilizing the anatomically correct right ear cup in a desired position due to meshing of the rib members with the teeth;

and wherein the second connector means for connecting the anatomically

correct left ear cup to the yoke of the second end mount further comprises:

- a plurality of spatially disposed rib members extending outwardly from the post and terminating substantially adjacent an outer perimeter of the connecting area formed on the back side portion of the anatomically correct left ear cup; and
- a plurality of spatially disposed teeth formed in a lower surface of the substantially dome-shaped housing, the spatially disposed rib members and the spatially disposed teeth cooperating to permit axial rotation of the anatomically correct left ear cup about the post of the second connector means while stabilizing the anatomically correct left ear cup in a desired position due to meshing of the rib members with the teeth.

23. The earmuff having anatomically correct ear cups of Claim 22 wherein the back side portion of each of the anatomically correct right ear cup and the anatomically correct left ear cup is provided with an upper indented portion and a lower indented portion, the upper indented portion facilitating the wearing of a hard hat and the lower indented portion facilitating the firing of a shoulder gun for recreation and sport.